METZ 10VE
VINYL ESTER CONCRETE

DESCRIPTION:
METZ 10VE is a novolac vinyl ester resin based polymer castable concrete, designed to replace chemically attacked concrete in many applications. It can be applied on top of, or instead of new concrete surfaces in areas subject to severe chemical and mechanical stress. METZ 10VE is applied at thicknesses of 15 mm and above.

FEATURES AND BENEFITS:
- High Chemical Resistance
  Resistant to strong oxidizing agents, alkalis and bleaches. Refer Metz Chemical Resistance Chart.
- High Temperature Resistance
  Resistant to temperatures up to 125°C.
- High, tensile and compressive strengths
- Speed of Installation
  Fast setting and can avoid the need for protective coatings

RECOMMENDED:
As a castable resinous concrete to repair or replace concrete in areas of chemical and mechanical attack in:
- Chemical and Petrochemical plants
- Pulp & Paper Plants
- Oil Refineries
- Acid plants

NOT RECOMMENDED:
- For exposure to strong solvents. Refer Metz Chemical Resistance Chart for alternative Metz materials.
- For long term immersion in concentrated oxidizing acids. Refer Metz Sauereisen 54SG and Metz 10EN.
- For thicknesses below 15 mm.

PHYSICAL PROPERTIES: (Typical Values)
Density g/cm³ 2.25 - 2.35
Compressive Strength, MPa >100
Maximum Service Temperature °C 125
Shrinkage % <0.3

COVERAGE:
Theoretical quantities (allow for wastage)
Topping: Metz 10VE 2.3 kg per sq. metre per mm of thickness

APPLICATION TEMPERATURE:
For optimum results, maintain a temperature of 4 to 30°C on air and substrate and components during mixing, application and curing. At temperatures below 4°C, the application becomes more difficult and curing is retarded. At temperatures above 30°C, the working time decreases.
Note: Material should be kept as cool as possible. Reducing material temperature will increase pot life.
1. Temperature of Working Area
   For optimum results, maintain a temperature of 4 - 30°C on air and substrate and components during application and curing. At temperatures below 4°C, the application becomes more difficult and curing is retarded. At temperatures above 30°C, the working time decreases. Application in direct sunlight and rising surface temperatures may result in blistering of the coating due to expansion of entrapped air or moisture in the substrate.

2. Reinforcement
   When casting with Metz 10VE reinforcement similar to that which would be used in a Portland cement concrete casting the same size and shape should be used.

3. Surface Preparation
   All surfaces must be clean and free from oil, grease, water and other contaminants which may inhibit bond. Surfaces must be dry.
   Concrete on grade should utilise a waterproof barrier beneath the slab.
   New Concrete
   New concrete should have attained a compressive strength of 20 MPa minimum. Surface must be free from laitance, form oils and curing compounds. The surface should have a fine wood floated or lightly broomed finish and be 28 days old.
   Old Concrete
   Concrete must be sound. Remove laitance, old paints, protective coatings and attacked or deteriorated concrete chemically clean surface to remove any contaminants. Abrasive blast or high-pressure water blast to remove laitance and provide a uniform, textured surface. All structural cracks should be repaired. All prepared surfaces must be allowed to dry prior to coating application. All surfaces must be vacuumed to remove any loose deposits and contamination.

4. Mixing
   i) Mixing Equipment
   Use a standard concrete mixer. Ensure mixer is clean and dry.
   ii) Mixing Proportions
   Metz 10VE By Weight By Volume
   Liquid 1 1
   Powder 4 2.75
   Note: The powder proportion can be adjusted slightly to suit conditions (±5% only)
   iii) Mixing Procedure
   Add powder to liquid gradually with constant stirring. Mix for 3 to 5 minutes. At end of the mixing period, all material should be wetted out and uniform in colour and consistency. Material which has begun to set must be discarded. Do not add any solvent, additive or adulterant to any component, or to the mixed material.
   iv) Pot Life
   at 20°C 35 minutes
   at 30°C 25 minutes
   at 40°C 15 minutes
   Note: Increase in temperature will decrease pot life, as will leaving mixed material in a large mass.
   v) Clean Up - Mixing equipment, tools, etc., can be cleaned with METZ Cleaner, xylene, acetone or M.E.K. prior to initial set of cement.

5. Installation
   Material should be placed immediately after mixing. Do not let mixed material remain in mixing vessel. Place Metz 10VE to desired thickness (minimum 15 mm). Finishing must be completed within 25 minutes of mixing at 20°C.

6. Setting/Curing
   Initial set: 20°C 1 hour
   30°-40°C 30 minutes
   Final set: 20°C 24 hours
   30°-40°C 12 hours
   Full cure: 20°C 72 hours
   30°C 48 hours
   40°C 24 hours
   Do not allow water, chemicals or traffic on the material surface for a minimum of 24 hours. For harsh chemical or physical environments, cure a minimum of 72 hours at 20°C prior to exposure.

7. Safety Precautions
   Liquid
   Inflammable - avoid sparks
   Use chemical goggles, PVC gloves and barrier cream. Avoid contact with skin and eyes. Ensure adequate ventilation.
   Powder
   Avoid breathing dust. Ensure adequate ventilation.
   For full safety precautions refer to Material Safety Data Sheets for all components.